Commonwealth of Kentucky
Division for Air Quality

RESPONSE TO COMMENTS

ON THE REVISED TITLE V PERMIT V-03-034
KENTUCKY UTILITIES COMPANY - E. W. BROWN GENERATING STATION
Burgin, Kentucky 40310
May 23, 2005
Herbert R. Campbell, Reviewer
Plant I.D. 21-167-00001
Application Log # 50118/E992

SOURCE DESCRIPTION:

The source is an existing source electric power generating plant in Mercer County, Kentucky, that has three pulverized coal-fired, dry bottom boilers and seven combustion turbine generators. One of the boilers has an input rating of 1260 mmBtu/hour, one has an input rating of 1733 mmBtu/hour and one has an input rating of 4128 mmBtu/hour. Five of the combustion turbines have a rating of 1368 mmBtu/hour each and two are rated 1678 mmBtu/hour each.

PUBLIC AND U.S. EPA REVIEW:

On December 16, 2004, the public notice on availability of the revised draft permit and supporting material for comments by persons affected by the plant was published in The Harrodsburg Herald in Harrodsburg, Kentucky. The public comment period expired 30 days from the date of publication. Comments were received from Louisville Gas and Electric on January 14, 2005. Attachment A to this document lists the comments received and the Division's response to each comment. Minor changes were made to the permit as a result of the comments received, however, in no case were any emissions standards, or any monitoring, recordkeeping or reporting requirements relaxed. Please see Attachment A for a detailed explanation of the changes made to the permit. The U.S. EPA has 45 days to comment on this proposed permit.

ATTACHMENT A

Response to Comments

Comments on Kentucky Utilities Company's E.W. Brown Generating Station Draft Title V Air Quality Permit submitted by Jason Wilkerson, Engineer III Environmental Affairs, LG&E Energy Services.

Title V Permit

1) Page 2 of 55: Consistent with previous positions of the Division, KU is interpreting the description section as a description of the unit and not an operational limitation of the unit. Does the Division concur?

Division's response:

The description for each unit is informational and should correspond to the most accurate information that was available at the time the permit was prepared.

2) Page 3 of 55: KU requests clarification within Section 4 Item d).

a. Once the trigger level is determined, the permit language seems to suggest that an inspection of control equipment and/or the COM is to occur if "any six-minute average opacity (averaged over a period of three hours) value exceeds the opacity trigger level." Is this language asking for a rolling three hour average of opacity data? In other words, along with the six-minute average opacity value collected from the COM, there is to be a rolling three hour average opacity value.

Division's response:

The Division concurs.

b. The requirement to check whether five percent of the COM data recorded in the quarter is over the trigger level seems to have quite a few exclusions. As written, the permit states that COM data is to be used "(excluding startup, shutdown and malfunction periods, data averaged over six minute periods)." The inclusion of the "data averaged over six minute periods" within the same parenthesis as the exclusions could be interpreted to suggest that they could be excluded as well. It probably should be separated. Secondly, for the opacity trigger level, should the 3-hour averages be used instead of the six minute averages when determining the amount of data above the trigger level compared to the five percent of data requirement?

Division's response:

The concept of an opacity trigger level and the establishment of the five percent (5%) excursion in any calendar quarter standard was agreed to by the Division and the Utility Information Exchange. It identifies that point at which the facility will be required to take specific actions~~;~~-- inspection and repair of equipment or conducting a stack test. It is not a regulatory or permit limit; it is a description of the condition of operation that the Division has determined warrants corrective action. Its purpose was to ensure consistency between Regional Offices and individual

inspectors so that utilities were not required to take different actions based on the same circumstances. Since it is based on an agreement that has met the purpose for which it was intended satisfactorily, the Division declines to change it in this permit.
This trigger level has nothing to do with any opacity limit as specified in the applicable regulations. As it is based on a correlation test between mass emissions and opacity it only identifies the level of opacity at which a presumption is made that the mass emission limit may be exceeded, and therefore a corrective action (i.e., inspection and repair) is appropriate. Furthermore, pursuant to 401 KAR 50:055 Section 2; you are required to operate your facility in a manner consistent with good air pollution control practice for minimizing emissions. Monitoring of opacity to ensure operation of you air pollution control device is required to meet this obligation.

3) Page 5 of 55: KU requests clarification within Section 6 Item a) Sub-item 4. As written, the permit states that "(p)roof of continuous monitoring system performance is required as specified by the Division whenever system repairs or adjustments have been made."
   a. What is the "proof" of performance that the Division is specifying? Could this be the performance of a daily calibration error check of the continuous monitoring system? A calibration is performed after repairs/adjustments to ensure the monitor is reading properly.
   b. Is that "proof" also to be submitted with the quarterly reports?

Division's response:

a) The assumption that KU made regarding proof of performance is generally acceptable. Minor repairs should be noted as exceptions and significant repairs would require the unit to be recertified. The language in question comes directly from the regulation from 401 KAR 61:005

> 16) Minimum data requirements. The following paragraphs set forth the minimum data reporting requirements. Both a printed summary and computer tape or cards shall be furnished in the format specified by the division.
>
> (d) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

b) This proof is required to be included in the quarterly reports.

4) Page 5 of 55: KU requests clarification within Section 6 Item b). Are the excursions above the trigger level to be reported based on the three-hour average of COM data?

Division's response:

The Division concurs.

5) Page 6 of 55: Consistent with previous positions of the Division, KU is interpreting the description section as a description of the unit and not an operational limitation of the unit. Does the Division concur?

Division's response:

See response to comment 1.

6) Page 7 of 55: KU requests clarification within Section 4 Item d).

a. Once the trigger level is determined, the permit language seems to suggest that an inspection of control equipment and/or the COM is to occur if "any six-minute average opacity (averaged over a period of three hours) value exceeds the opacity trigger level."
Is this language asking for a rolling three hour average of opacity data? In other words, along with the six-minute average opacity value collected from the COM, there is to be a rolling three hour average opacity value.

Division's response:

See response to comment 2a.

b. The requirement to check whether five percent of the COM data recorded in the quarter is over the trigger level seems to have quite a few exclusions. As written, the permit states that COM data is to be used "(excluding startup, shutdown and malfunction periods, data averaged over six minute periods)." The inclusion of the "data averaged over six minute periods" within the same parenthesis as the exclusions could be interpreted to suggest that they could be excluded as well. It probably should be separated. Secondly, for the opacity trigger level, should the 3-hour averages be used instead of the six minute averages when determining the amount of data above the trigger level compared to the five percent of data requirement??

Division's response:

See response to comment 2b.

7) Page 9 of 55: KU requests clarification within Section 6 Item a) Sub-item 4. As written, the permit states that "(p)roof of continuous monitoring system performance is required as specified by the Division whenever system repairs or adjustments have been made."

a. What is the "proof" of performance that the Division is specifying? Could this be the performance of a daily calibration error check of the continuous monitoring system? A calibration is performed after repairs/adjustments to ensure the monitor is reading properly.
b. Is that "proof" also to be submitted with the quarterly reports?

Division's response:

See response to comment 3.

8) Page 9 of 55: KU requests clarification within Section 6 Item b). Are the excursions above the trigger level to be reported based on the three-hour average of COM data?

Division's response:

See response to comment 4.

9) Page 10 of 55: Consistent with previous positions of the Division, KU is interpreting the description section as a description of the unit and not an operational limitation of the unit. Does the Division concur?

Division's response:

See response to comment 1.

10) Page 11 of 55: KU requests clarification within Section 4 Item d).

a. Once the trigger level is determined, the permit language seems to suggest that an inspection of control equipment and/or the COM is to occur if "any six-minute average opacity (averaged over a period of three hours) value exceeds the opacity trigger level." Is this language asking for a rolling three hour average of opacity data? In other words, along with the six-minute average opacity value collected from the COM, there is to be a rolling three hour average opacity value.

Division's response:

See response to comment 2a.

b. The requirement to check whether five percent of the COM data recorded in the quarter is over the trigger level seems to have quite a few exclusions. As written, the permit states that COM data is to be used "(excluding startup, shutdown and malfunction periods, data averaged over six minute periods)." The inclusion of the "data averaged over six minute periods" within the same parenthesis as the exclusions could be interpreted to suggest that they could be excluded as well. It probably should be separated. Secondly, for the opacity trigger level, should the 3-hour averages be used instead of the six minute averages when determining the amount of data above the trigger level compared to the five percent of data requirement?

Division's response:

See response to comment 2b.

11) Page 13 of 55: KU requests clarification within Section 6 Item a) Sub-item 4. As written, the permit states that "(p)roof of continuous monitoring system performance is required as specified by the Division whenever system repairs or adjustments have been made."

a. What is the "proof" of performance that the Division is specifying? Could this be the performance of a daily calibration error check of the continuous monitoring system? A calibration is performed after repairs/adjustments to ensure the monitor is reading properly.
b. Is that "proof" also to be submitted with the quarterly reports?

Division's response:

See response to comment 3.

12) Page 13 of 55: KU requests clarification within Section 6 Item b). Are the excursions above the trigger level to be reported based on the three-hour average of COM data?

Division's response:

See response to comment 4.

13) Page 16 of 55: KU requests that the description be changed as previously requested. Within the Description Section, the permit language states "…east track hopper operations and coal conveying and handling operations including conveyors A-1 and transfer points…." "A-1" should be changed to "A". The Division acknowledged in comments responding to the previous request that this change would be made. It was not done.

Division's response:

Comment acknowledged, and the change has been made.

14) Page 16 of 55: KU requests clarification within Section 3. The permit language states that EPA Reference Method 9 and the procedures in 40 CFR 60.11 shall be performed quarterly. Could the Division explain how a Method 9 is performed on an emission unit with no stack/vent as an emission point?

Division's response:

The Division is aware that this as a regulatory requirement. You may contact our Technical Branch or U.S. EPA. if the methodology is a problem for an alternative compliance demonstration.

15) Page 24 of 55: Within Section 1 *Operating Limitations*, KU requests clarifications:

a. What are the ISO standard conditions to which the heat input capacity is to be corrected?

Division's response:

The Division does not have any clarification, other than the ISO standard conditions defined under 40 CFR 60, Subpart GG.

b. Should the annual hours of operations not exceed 2500 hours for any "calendar year" rather than any consecutive twelve month period?

Division's response:

Your source requested a limit on your potential to emit with hours of operation that permits the units to meet the requirements of 401 KAR 51:017, Prevention of significant deterioration of air quality. While the Division appreciates your request for flexibility, we also seek to write a federally and practically enforceable permit. U.S. EPA interpretation for avoidance of PSD requires a limit to be set for any twelve consecutive months. The Division does not wish to issue a permit that might subject the source to a potential federal enforcement action. Therefore the conditions in the permit will not change.

16) Page 24 of 55: Within Section 2 *Emission Limitations*, KU requests the following changes:
   a. In Item a) Sub-item 1, there should be a duplication of the language found in sub-item 2 detailing that "Compliance shall be assured by following the alternate method approved in 40 CFR 75,…" 40 CFR 75 Appendix E methodologies are applicable and used during both natural gas and fuel oil combustion.
   b. In Item a) Sub-item 2, there is a typographical error. "(W)ater-to-fuel monitoing…" should be "water-to-fuel monitoring…." Verify this change before copying the language to sub-item 1, as described above.

Division's response:

Comment acknowledged, and the changes have been made.

17) Page 25 of 55: Within Section 2 Item b), KU requests that the formulas listed for calculating sulfur dioxide pounds per hour be replaced with a stipulation to use Appendix D methodology for calculating sulfur dioxide pounds per hour. 40 CFR 75 Appendix D Section 3.3 contains the equations that are being used.

Division's response:

Upon further discussion by conference call between LG&E representatives (Marlene Pardee and Jason Wilkerson) and the Division on 3/1/05, the issue has been resolved.

18) Page 25 of 55: KU requests clarification within Section 2 Item c. Could the Division explain why there is a requirement to keep 3-hour rolling averages of carbon monoxide? There appears to be no regulatory reason for keeping a 3-hour rolling average for carbon monoxide. Was this requirement placed here as the result of a typographical error? This requirement was not part of the previous draft permit (dated December 2003). There is no mention in any of the attached response to comments of why it was added.

Division's response:

Comment acknowledged, this is a BACT determination (C-92-005) set pursuant to 401 KAR 51:017. The PSD permit contained a limit stated as an hourly basis. Since compliance was required to be determined through the use of a three-hour performance test, the Division has relied upon U.S. EPA guidance to relax the hourly BACT limit to a three-hour limit.

19) Page 27 of 55: KU requests the following changes to Section 3 Item f:
"The permittee shall conduct at least one performance test for nitrogen oxide as per 40 CFR 75 Appendix E within the term of this permit…."
The requirement to perform the test within the third year of the permit is arbitrary. The combustion turbines are currently on a schedule to perform testing to evaluate the 40 CFR 75 Appendix E nitrogen oxide "emission curves". Testing will be done within the life of this permit. However, the current schedule does not allow for all the testing to occur within the third year. Additionally, in the attached response to comments, there is no mention of this "third year" requirement.

Division's response:

Upon review the Division concurs that the permit would require all turbines to be tested "within" the third year. The Divisions intent was that all turbines would be tested "by" the start of the fourth year of this permit. This will allow testing to be staggered over the first, second and third year.

20) Page 27 of 55: KU request clarification/corrections within Section 4 Item c). In following 40 CFR 75 Appendix D and E, there is no requirement for monitoring oxygen levels. Within 40 CFR 60 Subpart GG, there is no requirement for monitoring oxygen levels. Where is the regulatory requirement for combustion turbines to monitor oxygen levels? With no regulatory requirement, KU requests the removal of the Item c) requirements.

Division's response:

The Division does not have any clarification other than what has been provided in 40 CFR 75, Appendix E. Since the referenced regulation provides the procedures for oxygen monitoring, the requirement in the permit will not change. In addition, monitoring of oxygen is an indication of good combustion which is your source's BACT for CO and VOC.

21) Page 29 of 55: KU requests clarification with in Section 6 Item b). Since 40 CFR 75 Appendix E is to be used to ensure compliance with nitrogen oxide standards and be used to report excess emissions of nitrogen oxide, KU requests assistance in how to determine what is an excess emission period using this methodology. 40 CFR Appendix E tracks and reports nitrogen oxide in units of pounds per million BTU. The standard, as written in this permit, is in units of parts per million. KU requests help from the Division to develop a guidance to determine what is an excess emission for nitrogen oxide for the combustion turbines?

Division's response:

BACT determination was made in parts per million (ppm) Btu, and it is the source's responsibility to ensure compliance with these standards.

22) Page 30 of 55: Within Section 1 *Operating Limitations*, KU requests clarifications:

a. What are the ISO standard conditions to which the heat input capacity is to be corrected?

Division's response:

See response to comment 15a.

b. Should the annual hours of operations not exceed 2500 hours for any "calendar year" rather than any consecutive twelve month period?

Division's response:

See response to comment 15b.

23) Page 30 of 55: Within Section 2 *Emission Limitations*, KU requests the following changes:

a. In Item a) Sub-item 1, there should be a duplication of the language found in sub-item 2

detailing that "Compliance shall be assured by following the alternate method approved in 40 CFR 75,…" 40 CFR 75 Appendix E methodologies are applicable and used during both natural gas and fuel oil combustion. In Item a) Sub-item 2, there is a typographical error. "(W)ater-to-fuel monitoing…" should be "water-to-fuel monitoring…." Verify this change before copying the language to sub-item 1, as described above.

Division's response:

See response to comment 16.

24) Page 31 of 55: Within Section 2 Item b), KU requests that the formulas listed for calculating sulfur dioxide pounds per hour be replaced with a stipulation to use Appendix D methodology for calculating sulfur dioxide pounds per hour. 40 CFR 75 Appendix D Section 3.3 contains the equations that are being used.

Division's response:

See response to comment 17.

25) Page 31 of 55: KU requests clarification within Section 2 Item c. Could the Division explain why there is a requirement to keep 3-hour rolling averages of carbon monoxide? There appears to be no regulatory reason for keeping a 3-hour rolling average for carbon monoxide. Was this requirement placed here as the result of a typographical error? This requirement was not part of the previous draft permit (dated December 2003). There is no mention in any of the attached response to comments of why it was added.

Division's response:

See response to comment 18.

26) Page 32 of 55: KU requests the following changes to Section 3 Item f:
"The permittee shall conduct at least one performance test for nitrogen oxide as per 40 CFR 75 Appendix E within the term of this permit…."
The requirement to perform the test within the third year of the permit is arbitrary. The combustion turbines are currently on a schedule to perform testing to evaluate the 40 CFR 75 Appendix E nitrogen oxide "emission curves". Testing will be done within the life of this permit. However, the current schedule does not allow for all the testing to occur within the third year. Additionally, in the attached response to comments, there is no mention of this "third year" requirement.

Division's response:

See response to comment 19.

27) Page 33 of 55: KU request clarification/corrections within Section 4 Item c). In following 40 CFR 75 Appendix D and E, there is no requirement for monitoring oxygen levels. Within 40 CFR 60 Subpart GG, there is no requirement for monitoring oxygen levels. Where is the

regulatory requirement for combustion turbines to monitor oxygen levels? With no regulatory requirement, KU requests the removal of the Item c) requirements.

Division's response:

See response to comment 20.

28) Page 35 of 55: KU requests clarification with in Section 6 Item b). Since 40 CFR 75 Appendix E is to be used to ensure compliance with nitrogen oxide standards and be used to report excess emissions of nitrogen oxide, KU requests assistance in how to determine what is an excess emission period using this methodology. 40 CFR Appendix E tracks and reports nitrogen oxide in units of pounds per million BTU. The standard, as written in this permit, is in units of parts per million. KU requests help from the Division to develop a guidance to determine what is an excess emission for nitrogen oxide for the combustion turbines?

Division's response:

See response to comment 21.

29) Page 36 of 55: KU requests the addition of "Distillate oil and/or propane coal belt heaters (less than 1mmBtu/hr each)" to the Insignificant Activities list. Responding to the previous draft, KU requested that several items, including those coal belt heaters, be added to the Insignificant Activities list. In the Division's response to those comments, the Division acknowledged that the changes would be made. The coal belt heaters were not added to the list.

Division's response:

Comment acknowledged, and the changes have been made.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.